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ABSTRACT

While traditional views of literacy assume that discourse is either written or oral, an alternative perspective considers different discourse samples as part of the linguistic repertoire of the speech community. Placing this perspective in a sociolinguistic context and taking language use rather than form as the starting point for analysis, it is seen that the media of literacy available to the language user are options from which the speaker chooses. Like other linguistic choices they are dependent on the communication situation. Data collected in a larger study on computer communication, which were analyzed to identify co-occurrences of media and modes with context aspects, illustrate, in an office context, a proposed taxonomy of the use of four communication media (face-to-face, telephone, paper, and computer) and related modes. The face-to-face medium includes modes such as meetings, lunchtime conversation, and office conversation. The computer-mediated communication medium includes computer messages, computer mail, and document modes. The taxonomy defines the rules used in switching media and modes and accounts for both code-switching situations and single-code choices. It treats medium- and mode-switching as a variation of code-switching. (MSE)

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LITERACY AT WORK:
Medium of Communication as Choice

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INTRODUCTION

Since Aristotle, scholars have questioned the nature and value of literacy. Traditional views posited a dichotomy between orality and literacy, with acquisition of literacy changing the way people think. Plato in the *Phaedrus* (323) has Socrates point out that writing might weaken memory and writers might have the show of wisdom without the reality (cited in Scribner and Cole 1981:5). More recently, Havelock (1963), Goody and Watt (1968), Olson (1977), and, Ong (1977, 1982) among others have hypothesized that *literacy* reshapes consciousness. Other researchers, (such as (Heath and Thomas 1984, Pattison 1982, and Street 1984), however, claim that certain types of consciousness may be antecedent to literacy rather than a consequence of literacy, a view which challenges the direct causal view of previous scholars. Although the relationship between thought and writing is still unresolved, most researchers agree that certain uses of language co-occur with literacy and yet others co-occur with print or other technologies linked to writing.

Parallel with the traditional view that literacy changes consciousness is the view that oral and written language are dichotomous. Writing is the suitable vehicle for rational, critical thinking (Goody 1968); writing is analytic and sequential (Ong 1977); meaning and authority are lodged 'in the text' (Olson 1981, 1982); oral language is personal and emotional (Goody 1968); oral language is formulaic (Ong 1982); spoken discourse is context-bound.

Recent researchers such as Tannen (1982) suggest instead an oral/literate continuum with academic writing and dinnertable conversations representating

two maximally differentiated styles on the oral-literate continuum. Such research has identified strategies associated with orality, and others associated with literacy: strategies such as integration and lack of personal involvement are associated with writing while strategies such as fragmentation and personal involvement are associated with speaking. More recently, Tannen (1985) has claimed that differences between orality and literacy result from relative focus on personal involvement.

These views of literacy begin with the assumption that a stretch of discourse is either written or oral rather than by considering different discourse samples as part of the linguistic repertoire of the speech community. Heath (1983) and Street (1984), while they do accept different literacies as social products practiced within a community, do not situate these literacies within a sociolinguistic model, which I shall attempt to do here. By taking language use rather than form as my starting point, I found that medium represents part of the meaning potential (Halliday 1973) available to language users; available media are options from which speakers choose in the same way they make other linguistic choices, choices which depend on the context of situation (Halliday 1973).

DATA COLLECTION

The work reported here is part of a larger ethnographic study which focused on the use of the computer as a medium of communication.

Between September 1984 and June 1985, I spent from 20 to 30 hours a week collecting data as an observer in an IBM research laboratory. I focused observations on a project manager - in his office, in meetings, in the hall ways, at lunch, on the telephone, and online. I interviewed him formally, and had many informal discussions with him and his colleagues.

The data include observation notes, the console logs from the subject's terminal sessions, files containing all his incoming and outgoing electronic mail, audio tapes of interviews, and hard copies of memos, documents, overhead transparencies, computer manuals, etc. For this paper, these data were analysed to identify co-occurrences of media and modes with aspects of the context of situation.

MEDIA/MODES OF COMMUNICATION

Because terms such as channel, medium, and mode are used differently in different disciplines and even variously within the one discipline, I will define how I will use these terms in this paper. *Channel* refers to the pre-theoretical sensory modalities. For communication through language, three of the available channels are used: visual, aural and tactile. Written language makes use of the visual channel, while braille makes use of tactile, and sign language utilizes both visual and tactile. *Medium* refers to established methods of communication through language, each of which uniquely bundles channels (e.g. face-to-face). *Mode* refers to specific communication types within a *medium*, (e.g. meetings). I will use mode rather than genre because genre is often associated solely with literary types such as narrative.

The IBM community which I observed for this study uses a variety of communication *modes* and *media*. The four *media*, listed on Page 1 of your handout are: face-to-face, telephone, paper, and computer. Face-to-face includes *modes* such as meetings, lunchtime conversation, and office conversation. Computer-mediated communication includes computer messages, computer mail, fora, and documents. As these *modes* may be less familiar to you than meetings, I will briefly describe the distinctive features of each *mode*.

Computer Message (Example 1 in your handout) refers to the interchange of one-line messages between two or more participants simultaneously logged on to computer terminals. The message length when typing and when received is controlled by the system. In the IBM VM system, the sender is restricted to one

line of text. Once senders type these lines, they must either send the *message* by hitting the "enter" key[1] or abort the message. To send more text, they can type consecutive *messages*, usually indicating they have more to send by typing "..." at the end of each *message*. Because the system converts all characters into upper case, *messages* sent are in lower case, while *messages* received are in upper case, a situation which is now changing.

Computer Mail (Example 2 in your handout) refers to extended text which is sent and received via the computer. *Mail* is stored in recipients' files, whether they are logged on or not. To read the *mail*, they have to access their mail file.

Forums (Fora) refer to mail-type files (usually on one technical topic) with a wide distribution list to which a recipient can append another piece of information. Like *mail*, fora do not require simultaneous log on.

Documents include memos, the minutes of meetings, reports and technical papers, that have formatting controls designed for printing, which may be sent to recipients either in hard copy (printout), or in soft copy.

Because computer-mediated communication is a recent phenomenon, with few established conventions, and because it appears a hybrid of both oral and written language (Levodow 1980; Conklin 1984; Murray 1985, forthcoming), it illustrates how a speech community adapts a new medium to its repertoire of

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[1] In this system, text is not entered into the computer until the user hits the "enter" (execution) key.

communication media and, in particular, how the community develops shared rules-of-use for the medium (Nystrand 1982:11). Several different models (for example Jakobson 1960, Hymes 1972, Halliday 1973) have been proposed to explain the relation between language variation and the context in which the language is used. None of these models provides a complete explanation of rules-of-use involved in choosing a particular *medium* or *mode* or in switching back and forth between different *media* and/or *modes*. I propose a taxonomy of rules-of-use which accounts for both code-switching situations and also single code choices. Medium/mode switching could be considered under the more general category of code-switching. However, medium/mode switching differs from code-switching because it does not occur within one utterance and it is usually linguistically marked. Therefore, while the two phenomena are similar, it is theoretically advantageous to consider medium/mode-switching as a special case.

TAXONOMY OF MEDIUM/MODE CHOICES

The taxonomy consists of three main categories (on Page 2 of your handout): field of discourse, speaker/hearer, and setting. This division is a theoretical construct for discussing *mode switching* and *mode choice*. In actual discourse, the choice of *mode* is usually the result of the interaction among attributes from each of the categories. I use field rather than topic, because it is not just the topic itself, but also the orientation to the topic which can affect *mode*. I also use speaker/hearer rather than audience, because it is the relationship between speaker and audience which affects *mode*: how the speaker views the audience and assumes the audience views him/her; how the speaker wants to be viewed by the audience; and how these views and attitudes have built up over time before and during the current interaction.

I will use the terms *speaker* and *hearer* to indicate sender/writer/speaker and receiver/reader/hearer. I have chosen not to use the media-neutral terms sender/receiver because of their association with a particular theory of communication which is far from my enterprise here. Nor do I wish to collapse some of the differences between speaking and writing or listening and reading. I use speaker/hearer as a convenience, but one which at least carries with it the notion of participation and action.

I will discuss each category in turn to show how speakers *mode switch* and choose *modes*, occasionally using examples from my data as illustrations.

Figure 1. Taxonomy of Factors Contributing to Choice of Mode

1. Field

1. Topic
    - sensitive/open
    - simple/complex
2. Organization of Topic
    - parallel threads
    - episodic threads
3. Focus of Topic
    - on social cohesion
    - on action
    - unfocused
4. Distance between Language and Activity

2. Speaker/Hearer

1. Knowledge of Audience
    - who is potential audience
    - audience size
    - conversational style
2. Role Relations
    - power: institutional, personal, and expertise
    - affect
    - contact

3. Setting

1. Institutional Conventions
2. Space
    - Distance Between Speaker and Hearer
        - available channels
        - interactivity
        - permanence

- planning
- Availability

3. Time
   - time management
   - time zone

1. FIELD OF DISCOURSE

Several characteristics of the field of discourse contribute to *mode shift*: nature of the topic, organization of the topic(s), focus of the topic, and distance between language and activity.

1.1 Topic

Topic has two dimensions, both of which can be expressed as continua: sensitive/open and simple/complex.

Sensitivity. Topics may be sensitive because they deal with personnel issues or confidential data. People choose face-to-face or telephone conversations for extremely sensitive issues when they want to be sure the information is conveyed correctly at all levels: experiential and interpersonal. However, there are some situations where sensitive information is first conveyed through a less personal mode (a memo or electronic mail) so that the sender is not confused by personal issues. Such a choice may be made when one person is trying to convince another of something. An individual is most likely to write a well-argued, objective piece before seeing the person to be convinced face-to-face. In this case, the *mode* appropriate for the particular speaker/hearer relations takes precedence over those more suited to the sensitivity of the topic.

Messages are not considered a suitable *mode* for sensitive issues because of the potential for lack of privacy. So, in Example 1, John begins the interaction through *messages* but requests they move to face-to-face. Mary had asked several people at one research lab to co-operate with her in her research project. Although most had agreed, a couple had said they wanted management approval. Mary told John, her manager, through *mail*. She then went out of town for several days. On her return, John sent He chose face-to-face to report information from a third party so only Mary would receive it.

Complexity. If the topic is a quick, simple request for information, a *message* is most likely to be chosen because it is less interruptive to the recipient than the telephone and requires less effort of the sender. However, if the topic is highly complex, the sender may choose mail (as in Example 2), face-to-face, telephone, or document.

1.2 Multiple threads of discourse

Discourse topics can be organized as *parallel threads* or as *episodic threads* (Black, Levin, Mehan, and Quinn 1983). Non-interactive *modes* are chosen for *parallel threads*, whereas highly interactive *modes* such as face-to-face, and telephone conversations are used for *episodic threads*. However, *messages* fall somewhere in the middle: *parallel threads* occur but less often than in *mail* or *documents*. When they do occur, the second thread is often marked by a topic change marker, BTW (by the way), as in Example 3.

1.3 Focus

The dimensions of focus which determine choice depend on the extent to which the

focus is on social cohesion or "chat" (Economou 1985) or on action or on neither (which I call unfocused). These are not mutually exclusive in a stretch of discourse, and many discourses move from one to the other. Further, discourse intended to maintain social cohesion may be used by the recipient to initiate action.

Social Cohesion. If the major focus of the interaction is on social cohesion, face-to-face or telephone is chosen. Computer-mediated communication is seldom used for "chat" or phatic communication.

Action. *Mail* and *messages* (see Example 4) are chosen for requests for action, often in preference to face-to-face or telephone conversations. Participants do not need to spend time on social maintenance conversations and recipients can respond in their own time. *Mail* and *messages* are preferred to the telephone because of the certainty of making contact.

Unfocused. (see Example 5) *Mail* is the *mode* chosen for such unfocused discourse. With computer technology, it is very simple to send people files (with "for your information" added or not) or send *mail* to more than on person (carbon copy). Thus, junk mail proliferates.

1.4 Distance between language and activity

A further dimension of topic is the distance between the language and what it is talking about. Language in action (e.g. player talk in a football game) and language as reflection (e.g. a treatise on Football as an Expression of American Culture) represent the two ends of a cline, with intermediate forms such as

language about an activity (e.g. discussion about how to play football). Language in action occurs primarily in the oral mode, either face-to-face or telephone whereas language as reflection occurs primarily in written accounts. Within the VM community, many language events involve participants running programs, looking for bugs, changing the program, running it again, etc. Such events include eventcasts in which one of the participants relates verbally what he and the program are doing usually in a telephone, face-to-face, or computer message conversation.

2. SPEAKER/HEARER

Several characteristics of *speaker/hearer* contribute to choice of *mode*. Communicators switch or choose *mode* depending on (i) whether they know who their audience is; (ii) the size of their audience; (iii) their own and their recipients' conversational style; (iv) the power or affect they wish to convey; and (v) the amount of contact they have previously had with the recipient.

2.1 Knowledge of Audience

Who? Because of the ease of redistribution of *mail*, users will often switch from *mail* to face-to-face or telephone or place a "For Your Eyes Only" statement at the top of the *mail* if they do not want the information passed on.

How many? The size of audience motivates choice of *mode*. Most communicators choose fora, documents or oral presentation for a large, often unknown, audience. *Mail*, however, is preferred for an individual or a known larger audience and *messages* for a single recipient. However, *mail* intended for a

specific audience may be distributed more widely. Therefore, many users assume that *mail* is in the public domain. Consequently, some users carefully edit their *mail* as if it were for public distribution. Others, however, maintain a casual, conversational style.

Conversational style. Just as use of one language by a bilingual may result from knowledge that the addressee prefers that language, use of *mode* is variable according to the conversational style of the participants. Some interactants feel uncomfortable with computer messages and never use them. Thus, a potential interactant may choose another *mode* to fit the style of his/her partner. Others prefer the telephone or face-to-face to any computer-mediated discourse.

2.2 Role Relations

There are three aspects of role relations that affect choice of *mode*: power, affect, and contact.

Power. Within the business community (and elsewhere) power has three dimensions: institutional, expertise and personal. Institutional power refers to positions allocated to individuals by the institution, resulting in a hierarchy within the organization. Expertise refers to power resulting from a person's specialized knowledge. Personal power refers to individual personality or charisma.

Affect. Affect refers to the emotional tenor established between the participants and includes anger, warmth, etc. In Example 6, Peter, a manager, switches from *message* to telephone during a conversation with his systems

programmer, Ted. In the conversation preceding this *message*, Peter and Ted had been disagreeing about whether Ted should provide some documentation for a program he'd written. Peter could have used his institutional power to command Ted to write it. However, Peter and Ted are also friends and so Peter wanted to minimize his institutional power and at the same time establish a feeling of "friendliness" with Ted. He felt this could best be achieved through a more channel-rich medium, the telephone.

Contact. Choice of *mode* is dependent on the amount of contact participants have had with each other. While there is ample evidence for relationships being developed through traditional letters or online, if people have not had any previous contact, they will often choose a channel-rich medium to establish the initial relationship, such as in Example 7 when Guy asked if he could call Mary because he wanted to get a better sense of Mary's personality through paralinguistic cues.

3. SETTING

Setting includes characteristics of space and time. Space includes both the distance between speaker and hearer and availability while time refers to both time management and time zone setting. One aspect of the *setting* cuts across both space and time: institutional conventions, those uses of *mode* established as appropriate for specific institutional genres. It cuts across space and time because conventions change across time and across institutions. These changes result from recurring use for specific fields and speaker/hearer characteristics.

3.1 Institutional Conventions

While all the previous choices are part of a cultural system of language use, there are culturally accepted conventions which are institutionalized. These conventions change over time as choice of *mode* becomes standardized among a specific community for a specific use. Thus, for example, while contracts within IBM are constructed online, the final form is always print.

3.2 Space: Distance between speaker and hearer.

Several characteristics of the setting contribute to the distance between speaker and hearer and determine choice of *mode*: available channels, interactivity, permanence, and planning.

Available channels. One aspect of the distance between speaker and hearer is the number of channels of communication (visual, tactile, aural) available in the particular medium. Different media concentrate different bundles of potential channels. Face-to-face conversation can access all three channels while printed discourse does not access the aural channel and has restricted access to both visual and tactile channels. Depending on the value placed on the different channels in different social groups, different media will be chosen for different fields, speakers/hearers, and settings. Within computer-mediated communication, aural and tactile channels are unavailable or have restricted use. However, users' options may be limited because of another aspect of the context: they may choose *messages* because they are busy with other technical work. They then do not have the potential of using all the possible channels, even though this might be preferred. As a result, various conventions are developing to provide alternatives for paralinguistic and non-linguistic cues,

such as those in Example 8. The first icon, representing an unhappy face, is one of many suggested, but seldom used.

When the content is complex and requires constant reference to system names, commands, etc. (which are written in upper case) users may choose mail because mixed case is the default or even documents to be sure of being clear. Similarly, users prefer hardcopy when they want to use a variety of fonts which are not currently available on the terminal. This document, for example, is designed for a variety of typographical fonts. When read online, this channel is restricted because the various fonts are all represented by underscoring.

Interactivity. Another dimension of the distance between speaker and listener is interactivity. Interactivity refers to the potential for collaboration between the participants in an interaction.

I would argue that the aspect of mode which establishes specific options is a cline of amount of potential collaboration by the participants. Thus, face-to-face conversation provides the potential for maximum participation by both or all participants in the conversation. Written documents such as journal articles provide less opportunity. They do, however, initiate collaboration in the form of reviews, citation, argument (both oral and written) and replies.

This aspect of collaboration results in choices of media. Some computer communicators choose computer *mail* to present a logically, well-argued statement in order to remove personal and emotional issues from the initial discussion.

However, the motivating factor is that in the initial piece of mail, the sender wants to establish a certain role relation which is best achieved in a less interactive medium. Similarly, computer communicators who choose *messages* so they can "get away with" more blunt statements do so because they want to establish a collegial, non-hierarchical relationship which is best achieved in a highly interactive medium.

Permanence. A further aspect of the distance between speaker and hearer is the potential for continued referencing (permanence) which allows for multiple networks developing from the text. A permanent text can be referenced by many people and through time. Many conventions of language use result from the value the social group places on the permanence of the medium (for example, legal documents are written). Although modern Western culture values written text as permanent, other times and cultures have valued oral poetry and the telling of legends and myths as permanent cultural texts. Computer communicators make choices resulting from Western society's attitudes to permanence, such as storing personnel data in hardcopy.

Planning. A further contribution to distance between speaker and hearer is the potential for planning available in the *mode*. Face-to-face conversation is the least planned and written papers the most planned. Thus, people make choices depending on which is the most appropriate for the context of situation. As referred to above, computer *mail* may be used so the sender has time to plan a well-reasoned argument without interruption. Further, some users suggest they use computer *messaging* because it is unplanned and has few established conventions. Thus, computer communicators use a medium in which planning is

possible in order to distance themselves from both the content and the interactant. They then use the least planned *mode, messaging,* to close the distance between their interactant and themselves. A number of strategies are used to simplify *messaging* and allow sender's to concentrate on content of communication (see Example 9).

3.3 Space: Availability

A further aspect of space setting concerns whether the potential recipient is available for a particular *mode* of communication.

Often people check if the intended recipient is *logged on*. If s/he is not, they will send mail. If the person is logged on, they may do one of three things: send a message for the person to telephone, telephone the person themselves, or send a message and start a conversation. These choices will depend on the field and speaker/hearer relations referred to above.

When a user chooses the telephone as *medium* but finds the recipient is not there or the line is busy, s/he may choose to send a *message* requesting a telephone call, to avoid having to make repeated attempts to connect via the telephone.

3.4 Time: Time Zone

Because of time zone differences, people choose electronic mail in preference to telephone or messaging. They are sure of the information arriving and can be fairly sure of a quick response.

3.5 Time: Time management.

Computer users often choose computer conversation in preference to telephone because they can do other work at the same time (*parallel process*). It is less interruptive. However, other people find computer conversations also disruptive because they have to interrupt the work they are currently doing. The choice depends largely on two factors: number of terminals and the nature of the other work being done. However, if they get "in synch", one of the participants will suggest moving to a different medium, usually the telephone.

3.6 Time: Physical Constraints

In addition to the time factor involved in typing a long interaction, participants who are not touch typists find a lengthy interaction physically inefficient as in Example 10.

From this discussion we can see that *mode* and *medium* of communication are not primary determiners of discourse characteristics. Rather, they are also a linguistic choice and the features chosen depend on the context of situation. This leads to a rethinking of orality and literacy. The appearance of characteristics such as integration, personal involvement, etc. are primarily the result of the specific context of situation. When the role relation is one of high affect, high contact and low power, we would expect greater use of the characteristics Chafe has identified with personal involvement: use of personal pronouns and hedging. If the focus is on action, we would also expect more active voice and direct quotations. Thus, any theory of literacy must include *context of situation*. Recurring *contexts of situation* result in institutionalized choices of *media*. As Street (1984:96) says, "technology, then, is a cultural

form, a social product whose shape and influence depend on prior political and ideological factors".

However, the choice of *mode* is itself an indicator of field, speaker/hearer or setting through association. Thus, when one participant *mode-switches*, the switch is an indicator to the recipient that there is likely to be some associated change in field, speaker/hearer and/or setting. In this organic model, change in one dimension results in change in other dimensions.